39. Abdomen with a series of tufts.....40.
40. Expanse about 1¼ in.; black, rather crisply marked, usually with pale reniform .....*Hadena* (*Oligia*) *misera.*
40. Deep brown with white reniform or outer lunule in reniform, expanse an inch and a half or more.....41.
40. Not normally deep chocolate brown or black, and if so without white in reniform, usually dull fuscous, expanse over an inch and a half...43.
40. Expanse usually about 1⅛ in.; mostly dull fuscous, often with reddish tinge, with paler inner edge and subterminal space or black spots on margin .....*Hadena* (*Oligia*) *fractilinea.*
41. White lunule in outer part of reniform only.
Xylophasia (*Parastichtis*) *plutonia.*
41. Reniform largely white .....42.
42. T.a. and t.p. lines distinct though not contrasting, paler and nearly even.
Xylophasia (*Agroperina*) *dubitans.*
42. T.a. and t.p. lines wholly obscure; ground color always somewhat reddish.
Xylophasia (*Agroperina*) *cogitata.*
43. Mottled, subterminal without any suggestion of a W-mark on M_3 and Cu_1, veins often with paler streaks; eyes not lashed.
Eremobia maillardi var. (*Hadena exulis*).
43. Veins not tending to be marked with paler streaks; with a distinct W-mark on the subterminal line, which however reaches only half way to margin; subterminal white and preceded by black wedges; eyes lashed.
Xylophasia (*Eumichtis*) *ducta.*

THE GENUS PHILOBIA DUPONCHEL, AND SOME REPRESENTATIVES IN OUR FAUNA. (LEP., GEOM.)

BY RICHARD F. PEARSALL,

BROOKLYN, N. Y.

The genus *Philobia* was established by Duponchel in 1829, having *notata* Linn., a European species, as its type. Curtis, in 1826, published his genus *Macaria,* of which *liturata* (Clerck.), also a European species, is type. The most obvious difference between these types is presented in the structure of the hind legs of the male. In *notata* the tibia is but slightly swollen, with a small external pencil of hairs, and the long tarsi equal about two thirds its length, while in *liturata* the

tibia is long, greatly swollen and contains within its sheath a heavy brush of hairs, while the tarsi are so short as to equal little more than one third its length. Both these genera appear to me to be well founded, but European authorities, I believe, group both *notata* and *liturata* under the genus *Macaria.* I have considered it proper, in view of the facts presented, to recognize *Philobia* as the genus under which our species should be marshalled. The names *notata* Linn. and *enotata* Guen. have been applied indefinitely to our species. Dr. Packard (Mons. Geom. Moths, 1876) placed both under *Semiothisa,* a composite Hubnerian genus, and later Dr. Hulst (Classif. Geom. of N. A., 1896) endeavored to correct this by using the genus *Philobia,* but he was clearly unable to distinguish one species from the other, as he confesses. We must discard both these names, for neither of them has a place in our fauna. The former certainly has not; the latter, the type of which came from Brazil, may, by chance, enter our southern boundary, but has not as yet been taken, so far as I can ascertain. For others of this group he erected the genus *Sciagraphia,* but its type, *granitata* Guen., is a *Macaria* in my opinion, and if so, *Sciagraphia* must fall as a synonym. We are left, then, with a small group of *Philobia* species, all, with one exception, being without names. So far as my material permits, I have separated them, using the genitalia largely to confirm my species. In general appearance and markings they resemble one another closely and yet when massed in series as I have them, it is rather obvious that they are distinct forms. Authors heretofore have stated that the male in *Philobia* is without hair pencil on the hind tibiæ, and in flown examples this appears to be so, only because it has been removed by abrasion, probably when copulation takes place. I have already noted a like occurrence in the genus *Epimecis* Hub. (Can. Ent., Vol. 38, p. 179), my specimens in that instance having been reared from larvæ, yet in all flown males of it that I have since examined, and they are many, no trace is left of this appendage except the cicatrix, or scar, where it was attached. In the case of *notata* my attention was first directed to it, when I received, through the kindness of Mr. Prout, a male from Budapest. This fine specimen had short hair pencils attached to the inside of the tibiæ, just below the joint, and, in order that he might see "with his own eyes," I returned the example to him. However, it is before me now, as I write, with a single hind leg and hair pencil intact, after

crossing the Atlantic three times. Upon examining all my males in this group, I found but two with traces of the pencil present, the rest showing only the scar where it had been attached. My male type of *perplexata* n. sp. hereinafter described, has the hair pencil on both legs seemingly intact, in length about half that of the tibia, the hair very fine and curled at the tips. In *notata* it is straight and coarser.

PHILOBIA Dup.

1829. Histoire Nat., VII, 195. Type, *notata* Linn.

In this genus the antennæ are serrate, each joint, toothed near the outer end, is tipped with a fascicle of hairs in the ♂, almost simple and evenly ciliate with a fine hair-like bristle in the ♀. Front rounded, smooth, palpi slightly extended beyond it; tongue well-developed; hind tibiæ with two pair of spurs in both sexes, the male with a small external pencil of hairs, generally removed by abrasion. Thorax and abdomen without tufts. Wings rather broad, the costa of primaries much rounded at apex, and below it the outer margin excavated between veins R^5 and M^3, and in the ♂ a fovea below, at base beneath cell. Secondaries with sharp angular point at margin, opposite vein M^3.

Philobia ulsterata new species.

Expanse, ♂ 24–28 mm., ♀ 25–30 mm. Front, palpi, antennæ and collar brownish ochre, the latter decidedly darker. Body and all wings above are white, but peppered thinly, and minutely strigate with dusky scales; they have a soiled appearance. Dusky lines cross primaries, their inception at costa marked with heavy dark chocolate brown spots. The basal spot linear, crossing costa toward outer margin and continued by a narrow dusky line, curving outward to inner margin. The second spot is quadrate, and the line from it is usually broader and darker and runs straight across wing, often waved in its course. The extra discal is linear, and like the basal in its direction across costa to vein M', then in a fine line of same color, wavy and heavily marked at center of wing, fading into dusky below, runs direct to inner margins. Apical spot broad, quadrate, extending to vein M', leaving between it and the extra discal spot a triangular white space at costa. Broken below vein M', the line reappears, at wing center, as three heavy dark spots, separated by the white veinings, the central one much the largest. All cross lines marked with two or three dark brown scales at vein crossings. A heavy dark brown marginal within excavation below apex, and dots between the veins

below it, along outer margin. Fringes white, heavier and purplish brown within excavation. Secondaries are crossed by two lines, the basal apparently a continuation of the intradiscal of primaries; straight or a little wavy, the extra discal slightly curved outward is also a continuation of the primary outer line, and on both wings is accompanied by a broken dusky shade line or band in submarginal space. The round discal dots dark brown, distinct; none on primaries; marginal dots as on primaries, fringes white. Beneath, the veins and costa are ochraceous, and the white surface more heavily sprinkled with dark scales basally and along costal region of primaries. Lines reproduced as above, the intradiscal, heavy and dark brown, crosses both wings. The extra discal, fine and clear at costa, fades out toward inner margin of primaries, and outside, parallel to it, there is on both wings a broad, irregular band, varying in my series of thirty-six specimens from dull purplish brown, through ochre brown to rusty ochre. Discal spots dark brown, large, distinct, linear on primaries, round on secondaries. The apico-costal spot on the primaries is well marked, but ochre brown in color, and the three round dusky spots at center and outside extra discal line are present, but less clear in outline than above. The marginal line within excavation broken, and the fringe paler, nearly white, otherwise as above. Body the color of wings, thinly sprinkled with dark scales, the abdomen ochreous at tip, with a double row of six to seven dark brown dorsal dots, and a single row on each side below lateral margin in both sexes. Legs tinged with ochreous, blotched with dark brown.

Types.—One ♂ from Big Indian Valley, Catskill Mts., N. Y., VI, 28, 1907, and one ♀ from Big Indian Valley, Cats. Mts., N. Y., July 8, 1898, are in the author's collection, with co-types of seven males and eight females from the same locality, dates ranging from May 28 to July 10, and one male from Long Island, N. Y., June 21, 1889, all taken by the writer.

Habitat.—This, our largest species, is single brooded, and is not uncommonly found from Penna. north and eastward, more plentifully in the mountain districts.

Philobia æmulataria Walker.

1861. Walker, List Lep. Brit. Mus., XXIII, 884. *Macaria.*
1872. Zeller, Verh. zool.-bot. Ges. Wien, XX, 487. *Macaria.*
1874. Morrison, Proc. Bost. Soc. Nat. Hist., XVI, 198. *Macaria sectomaculata.*
1876. Packard, Monog. Geom., 288, Pl. X, Fig. 15. *Semiothisa enotata* Guen.

The type of *æmulataria,* a ♂ from "New York" is in the British Museum. A specimen, now present in my collection, has been com-

pared with the type, through the courtesy of Mr. L. B. Prout, and bears his label, reading, "æmulataria Walk. ♂ (his supposed ♀ from E. Florida differs) compared with type. L. B. P." Walker's name is therefore limited to the ♂ from "New York" and is referable here.

Habitat.—Common throughout the middle and eastern states. Though I take it on the Catskill Mts., it is not so common there as is *ulsterata,* seeming to prefer the lower levels. It ranges smaller in size than that species, and in color is a decided ochraceous, not white, and the sectional central spots are larger, more conspicuous than in any other species. Morrison's type of *sectomaculata* in the U. S. Nat. Museum Coll. is a large ♀ labeled "Hyde Park, Ms., May 25." A ♀ *æmulataria* in my collection, compared with it, is an exact counterpart, and at the time of my visit (April, 1912) Dr. Dyar also concurred in this opinion.

Philobia perplexata new species.

Expanse, ♂ 24 mm., ♀ 26 mm. Palpi, front, antennæ and collar deep ochre or buff. Costal edge marked with a few dark brown strigæ, chiefly toward base, and scales of the same color are sparingly sprinkled over the antennæ above, and mark the cross lines at veins. Body and wings above are covered with soiled, white and ochreous scales, intermixed about equally, giving an ochreous tinge, and the veins are ochreous above and beneath. Cross lines as in *ulsterata* well defined, ochre yellow; the basal of primaries has less outward curve; the intradiscal, after crossing costa touches the upper point of a lineate discal spot of the same color, thence inside it straight to inner margin. The apico-costal spot, a little rusty at its inception, is continued across both wings as a broad buff band, outside and close to extra discal line, and includes the divided dark brown spots at center of primaries, at which point also the extra discal becomes broader and dark brown. Marginal dark brown line broken into spots or dashes between veins. Fringe heavy in excavation, below apex, chocolate with a purplish tinge, elsewhere pale ochreous. The round discal dots on secondaries are distinct, dark brown. Beneath, the costa is broadly ochreous; the ochre ground tint is generally deeper and the brown specks larger and darker. Lines reproduced as above, distinct, brown, the broad outer band more broken, deeper ochre, and in highly colored examples like the male type, is traversed centrally by a row of purple brown spots that are enlarged and intensified in color at center of all wings. In paler specimens they become mere blurs. Fringes as above. Discal spots black, linear on primaries, a round distinct dot on secondaries. Legs ochreous, with brown scales and strigæ. Abdomen with a double row of dorsal black spots on first to seventh segments in females, often confined to the first and second in males.

Types.—One male and one female from Provo, Utah (Spalding), captured, the former July 26, 1909, the latter June 7, 1910.

Habitat.—Before me I have fifty-four examples of this species, all taken at Provo in 1909 and 1910, and at Eureka, Utah, in 1911, from which I have selected eight males and eight females as co-types. The dates, ranging from June 24 to July 30, would indicate the species to be single brooded.

Philobia versitata new species.

Expanse, ♂ 22 mm., ♀ 24 mm. Palpi, front, antennæ and collar pale brownish ochreous, the cross lines and broad outer band also of this color, intensified and in some examples tinged with rust red at costa. Ground color of body and wings much as in *perplexata,* but paler, the veins ochreous. Extreme costal edge of primaries with strigæ and scattered spots of dark brown. The heavy dark brown central spot is present, but its outline is square, and the parts tend to coalesce. The vein crossings but slightly marked. Marginal lines on primaries heavy, dark brown within excavation, broken into spots below it, almost continuous on secondaries. Fringes within excavation dark brown, with a pale line at base, elsewhere on all wings pale ochre. Discal spots linear on primaries, pale ochreous, sometimes brownish; round on secondaries, dark brown. Beneath much as above, but the lines and band are pale yellow brown. The central brown spot but feebly portrayed, often not at all. Marginal line and fringe as above. Discal marks linear on primaries, round on secondaries, distinct, dark brown. In the ♀ the abdomen above sometimes has double spots of pale ochreous in first and second segments, that of the males unspotted. Legs tinged with ochre and sparingly spotted with brownish scales.

Types.—One ♂, Clear Creek, Col. (Oslar), May 27, 1908, and one ♀, Rico, Col. (Oslar), July 7, 1905.

Co-types, two males and two females, Chimney Gulch, Golden, Col., June 21, 1908, one ♂ and one ♀, Clear Creek, Col., May 27, 1908, and one ♀, Rico, Col., July 7, 1905. My material is rather scant in this species, but the genitalia show a decided difference from any other form. It is our smallest species in both sexes. Males of *æmulataria* and *aspirata* are nearly of the same size, but the females of the former are much larger.

Habitat.—Central Colorado.

Philobia aspirata new species.

Expanse, ♂ 22 mm., ♀ 26 mm. Palpi, front, antennæ and collar dull grayish ochre, the palpi pale, almost white at tip as is a narrow line on front just

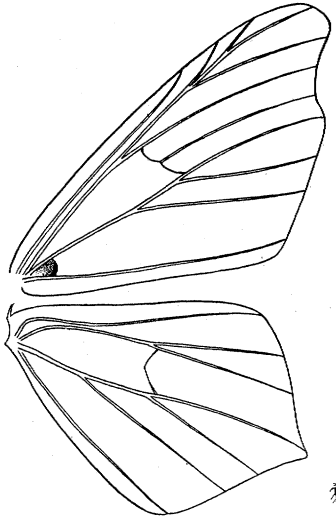
above clypeus. Ground color of body and wings cream white, heavily flecked with grayish ochre scales, the subterminal space often so thickly covered as to quite obscure the ground color. Veins more faintly outlined with ochre than in other species. Cross lines as in others of the group, but grayish, and the broad outer band if present is poorly defined or quite obliterated by the heavy gray scaling. Costa at base and at inception of cross lines marked with dark brown spots and dashes, the large spot at wing center is of the same color, rather clearly defined and the cross lines at veins are dotted. Marginal line within excavation heavy, dark brown, the fringe paler brown, with a purplish tinge, lighter at base. Elsewhere the marginal line is indistinct or much broken and the fringe ochreous gray. Discal marks on primaries very faint, linear, on secondaries a small round dark brown dot. Beneath, the cross lines are reproduced as above, rather heavy but the flecks of grayish scales are dense only near base of wings and subcostally leaving the ground color of other parts much clearer than above. The subterminal broad band is rusty ochre and much broken, including at wing centers of both primaries and secondaries diffuse brownish spots between veins at M^3. Marginal line and fringes as above. Discal marks more clearly defined. Body beneath and legs sprinkled with brown scales and the abdomen marked dorsally with a double row of six or seven spots in the female, on the first and second segments only in the male.

Types.—One ♂ and one ♀ from Prescott, Arizona (Dr. Kunze), August 16, 1909, and August 22, 1909, respectively.

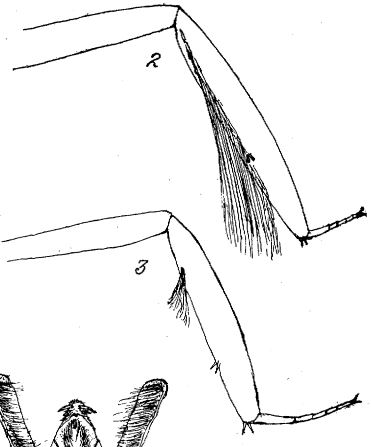
Habitat.—My material is limited to Arizona, but I am quite certain I have seen specimens from Texas that are the same.

Co-types are two males, Palmerlee, Cochise Co., Ariz., in August, 1905, one female, Douglas, Ariz., August 23, 1908, and one female, Prescott, Ariz., August 14, 1909.

In preparing mounts of the genitalia here depicted, I found it quite impossible to avoid a measure of distortion to some of the parts, when pressure of the glass cover was applied. I therefore prepared a second series, and with their aid corrected my drawings, so that they are as nearly counterparts as I could make them, being careful not to exaggerate the points of specific difference when noted. To the Rev. C. R. N. Burrows, of Essex, Eng., I am indebted for drawings of the genitalia of *notata, alternata* and *liturata,* all of England, as well as some appendages of the imagoes that were essential for comparison.

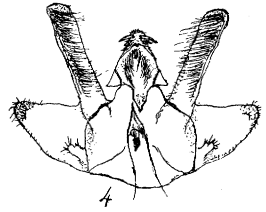


1

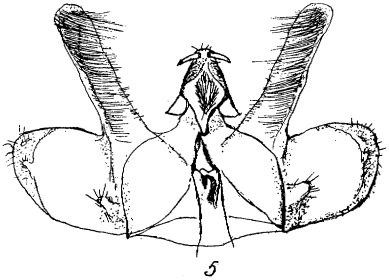


2

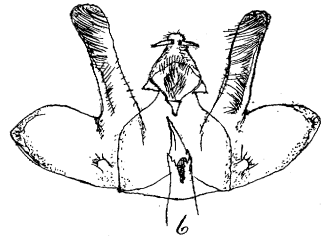
3



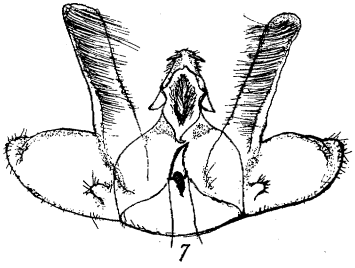
4



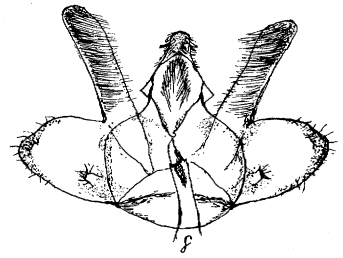
5



6



7



8

Philobia

EXPLANATION OF PLATE III.

1. Venation of ♂ *Philobia ulsterata.*
2. Hind leg of ♂ *Macaria.*
3. Hind leg of ♂ *Philobia.*
4. Genitalia of ♂ *Philobia æmulataria.*
5. Genitalia of ♂ *Philobia ulsterata.*
6. Genitalia of ♂ *Philobia versitata.*
7. Genitalia of ♂ *Philobia perplexata.*
8. Genitalia of ♂ *Philobia aspirata.*

REPORT ON A COLLECTION OF CRANEFLIES (TIPULIDÆ, DIPT.) FROM THE COLOMBIAN ANDES, TAKEN BY MR. JOHN THOMAS LLOYD.

BY CHARLES P. ALEXANDER,

ITHACA, N. Y.[1]

A rather extensive collection of craneflies taken by Mr. John Thomas Lloyd on the central chain of the Andes in southwestern Colombia, March, 1912, was handed to me for study. The types have been deposited in the Cornell University collection, where the remainder of the Andean insects are preserved; certain of the paratypes are in the author's cabinet. Mr. Lloyd and Dr. A. A. Allen, whose bird collections have been considered in a recent paper by Frank M. Chapman,[2] undertook this trip along the Cordillera Central in the spring of 1912. The itinerary of the expedition as originally planned was much more extensive, but serious illness in the party prevented collecting after leaving the "Valle de las Papas."

The collection embraces some 125 specimens referable to 22 species, of which 15 are herein described as new. The only published paper which considers craneflies from this altitude of the Andes is by von Röder, "Dipteren von der Cordilleren in Columbien."[3]

The following data regarding the localities collected in was furnished by Mr. Lloyd and Dr. Allen.

[1] Contribution from the Entomological Laboratory, Cornell University.

[2] Bull. Am. Mus. Nat. Hist., Vol. 31, Art. 16, pp. 139, 140.

[3] Victor von Röder, Stett. Ent. Zeit., Vol. 47, pp. 257–270 (1886).